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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,926	05/15/2001	Mikio Inoue	1182-01	2193

35811 7590 07/08/2004

IP DEPARTMENT OF PIPER RUDNICK LLP  
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PHILADELPHIA, PA 19103

EXAMINER

COLE, ELIZABETH M

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/831,926	<b>Applicant(s)</b> INOUE ET AL.	
	<b>Examiner</b> Elizabeth M. Cole	<b>Art Unit</b> 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15, 16 and 19-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 19-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-16, 19-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 8-007897, (machine translation attached) in view of JP 56-093265. JP '897 discloses a fuel cell body. Paragraphs 0015 -0017 as well as figure 2 of the drawings show a gas diffusion layer which is indicated as numeral 4 and which extends between the arrows, comprising carbon black particles 8, carbon fibers 6 and fluoro resin, (TEFLON) 7. Diffusion layer 4 is located next to catalytic layer 3 which comprises carbon 10 with supports platinum 9. JP '897 differs from the claimed because it does not teach incorporating the expanded graphite in the diffusion layer. JP '265 teaches that expanded graphite may be included in the diffusion layers of graphite in order to enhance the conductivity of the fuel cell.

3. Applicant's arguments filed 4/20/04 have been fully considered but they are not persuasive. Applicant argues that in JP '265 there is no disclosure of a fluoro resin in the gas diffusion layer but instead the fluoro resin is in the catalyst layer. However, this argument is rendered moot by the new rejection which employs JP '897 as the primary reference. JP '897 teaches a diffusion layer 4 which comprises carbon staple fibers, carbon black particles and fluoro resin. Applicant argues that the short carbon fibers are located on the surface of the gas diffusion layer in JP '897. However, as set forth above, the diffusion layer comprises layer 4 which is shown in detail in figure 2. The carbon fibers 6 are part of layer 4. Therefore, the

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diffusion layer of JP '897 comprises the carbon fibers. The conductive material in JP '897 is the catalytic layer.

4. Applicant argues that neither JP '897 nor JP '256 teaches that the expanded graphite is recessed at contact points. However, since the expanded graphite is highly deformable and the sheets of JP '265 and JP '897 are made by pressing the sheets the expanded graphite would necessarily be recessed at contact points. The claims do not contain any limitations regarding how many of the expanded graphite particles are recessed, they simply recite that they are recessed contact points. Therefore, arguments regarding the relative number of contact points in the claimed invention versus the references are not persuasive.

5. Applicant's arguments regarding the teaching of JP '897 applying short carbon fibers to the gas diffusion layer are addressed above, namely, the short carbon fibers in JP '897 are part of the gas diffusion layer.

6. It is noted that Applicant has used improper status modifiers to denote the status of the claims. The status modifier (Previously Added) should not be used. Instead (Previously Presented) should be used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (571) 272-1478.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

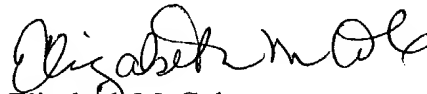
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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (703) 872-9306.

A handwritten signature in black ink, appearing to read "Elizabeth M. Cole". The signature is fluid and cursive, with the first name being the most prominent.

Elizabeth M. Cole  
Primary Examiner  
Art Unit 1771

e.m.c